The Development of a Musculoskeletal Screening Tool for Adults with Cystic Fibrosis

Ashbrook, J. MCSP, Taylor, J. MCSP, Johnson, S. MCSP, Jones, A.MD
Manchester Adult Cystic Fibrosis Centre, University Hospital of South Manchester, Manchester, UK

Introduction

It is clear that problems with the musculoskeletal (MSK) support system, including pain, postural abnormalities, decreased bone mineral density and stress urinary incontinence are having an ever greater impact on the quality of life and respiratory function of people with cystic fibrosis (CF).

Musculoskeletal problems have long been identified as complications of an ageing cystic fibrosis population. As early as 1981 Denton noted musculoskeletal abnormalities and suggested treatment including stretching and strengthening exercises. Whitfield et al (2009) (1) calculated that (83) 53% of patients at the Manchester Adult CF centre complained of musculoskeletal pain or postural abnormalities. Ashbrook et al 2010(2) confirmed that stress UI and back pain are prevalent in this population with 73% of patients complaining of symptoms. The management of MSK conditions has become an integral part of the multi-disciplinary (MDT) care of people with CF. How do we decide which patients require treatment and when to intervene?

Aim

To develop a musculoskeletal screening tool to:
- Be quick to complete by any member of the MDT.
- Monitor the progression of MSK problems.
- Identify early MSK problems prior to the onset of pain.
- Ensure appropriate MSK referrals.
- Give patients the opportunity to receive preventative MSK input.

Methods

A screening tool was developed by two specialist MSK physiotherapists. A comprehensive list of subjective measurements, objective measurements and out come measures was made. This was gradually reduced by order of perceived importance until the screening tool incorporated seven questions that could be interpreted by any member of the MDT.

The tool consists of two sections. If the patient answers yes to any of the first section they have failed the screening and the second section is not required. If the patient answers no to all questions in the first section then the second section must be completed. In order to pass the screening the patient must answer “no” to all seven questions.

Results

20 patients were screened using the tool. 16 failed part one and were referred directly to the MSK physio team. Of the remaining 4 patients who underwent part two, 2 failed and were referred to the MSK team, 2 passed and will be screened again in one year.

Conclusion

In total 90% of patients in the pilot study failed the screening tool and were offered MSK physiotherapy.

The addition of observation in part 2 of the screening tool identifies MSK problems more frequently (90%) than questioning alone in part 1 (80%).

15% of patients declined an MSK assessment, but were happy to be screened again in 1 year.

The screening tool has been rolled out to all patients at annual review or in-patient admission.

The screening tool has lead to an increase in MSK intervention in the presence of postural abnormalities and spinal stiffness prior to the onset of pain.

Discussion

The feedback from non-MSK physiotherapy staff is that section one of the tool is easy to understand and quick to fill in. Section two is more time consuming because the patients posture and spinal movement needs to be observed. Most patients fail the tool in the first section, therefore section two is not often required.

The screening tool has been designed for use in a CF centre that employs MSK specialists. The tool can be adapted to suit the needs of CF centres with differing provision of MSK services.

Smith et al (2006)(1) established links between stress UI, spinal pain and respiratory disorders in the general population. They found that the presence of one of these conditions made the others more likely to occur.

Ashbrook et al (2010)(2) found statistically significant links between stress UI and spinal pain in the CF population.

Further research is necessary to establish whether early intervention as a result of the screening tool is effective in preventing the onset of MSK pain and stress UI and whether it is possible for this to impact an respiratory function.

References